

FOR NATIONAL PHASE SUBMISSION

2

CLAIM AMENDMENTS

WHAT IS CLAIMED IS:

This listing of the claims will replace all prior versions, and listing, of claims in the application:

1. (~~Currently Amended~~) ~~Method~~ A method for commutating ~~the~~ at least one phase ~~(P_i)~~ of an electric motor ~~(1)~~, in which ~~the~~ a commutation angle ~~(α)~~ of the at least one phase or of each phase ~~(P_i)~~ is continuously varied as a function of ~~the~~ a rotary frequency ~~(f)~~ of ~~the~~ an electromagnetic energizing field ~~(F)~~ of the electric motor ~~(1)~~ and/or of an adjustable variable ~~(S)~~ for the drive power,

~~characterized in that wherein~~ a full cycle ~~(10)~~ of the energizing field ~~(F)~~ is divided into a number ~~(n)~~ of zones ~~(Z_i)~~ and the at least one phase or each phase ~~(P_i)~~ is commutated in accordance with a control pattern ~~(12, 12')~~ stored depending on these zones ~~(Z_i)~~ with ~~the~~ an angular extent ~~(δ_1, δ_2)~~ of at least two zones ~~(Z_i)~~ being varied for setting the commutation angle ~~(α)~~.

2. (~~Currently Amended~~) ~~Method~~ A method in accordance with claim 1, ~~characterized in that wherein~~ the full cycle ~~(1)~~ is divided into alternating consecutive zones ~~(Z₁)~~ of a first group and zones ~~(Z_m)~~ of a second group, with zones ~~(Z₁, Z_m)~~ of the same group each featuring the same angular extent ~~(δ_1, δ_2)~~.

FOR NATIONAL PHASE SUBMISSION

3

3. (Currently Amended) Method A method in accordance with claim 2, ~~characterized in that~~ wherein the at least one phase or each phase ~~(P_i)~~ is activated via an odd number ~~(m)~~ of consecutive zones ~~(Z_i)~~.

4. (Currently Amended) A method in accordance with claim 1, wherein Method in accordance with one of the Claims 1 to 3, ~~characterized in that~~ the commutation angle ~~(α)~~ is varied between a minimum value corresponding to a low speed ~~(f)~~ and/or power and maximum value corresponding to a high speed ~~(f)~~ and/or power.

5. (Currently Amended) A method in accordance with claim 1, wherein Method in accordance with one of the Claims 1 to 4, ~~characterized in that~~ the characteristic variable ~~(S)~~ for the power ~~(P)~~ included for adjusting the commutation angle ~~(α)~~ is derived on the basis of the rotary frequency ~~(f)~~ and an associated required value ~~(f₀)~~.

6. (Currently Amended) A method in accordance with claim 1, wherein ~~Method in accordance with one of the Claims 1 to 5,~~ ~~characterized in that,~~ the phase at least one or each phase ~~(P_i)~~ is activated pulse-width modulated depending on the rotary frequency ~~(f)~~ of the energizing field ~~(F)~~ and/or the adjustable variable ~~(S)~~.

FOR NATIONAL PHASE SUBMISSION

4

7. (Currently Amended) A method in accordance with claim 6, wherein ~~Method in accordance with claim 6,~~ characterized in that, in a low-performance range ~~(1)~~ identified by a low value of the rotary frequency ~~(f)~~ or adjustable variable ~~(s)~~ with a constant commutation angle ~~(a)~~ the phase or each phase ~~(Pi)~~ is activated pulse-width modulated and in a mid performance range ~~(21)~~ identified by a high value of the rotary frequency ~~(f)~~ or adjustable variable ~~(s)~~ the commutation angle ~~(a)~~ is varied.

8. (Currently Amended) A method in accordance with claim 1, wherein ~~Method in accordance with one of the Claims 1 to 7,~~ characterized in that the phase or each phase ~~(Pi)~~ is activated in a unipolar manner.

9. (Currently Amended) A method in accordance with claim 1, wherein ~~Method in accordance with one of the Claims 1 to 8,~~ characterized in that the phase or each phase ~~(Pi)~~ is activated in a bipolar manner.

10. (Currently Amended) DA device ~~(9)~~ for commutating ~~the~~ at least one phase ~~(Pi)~~ of an electric motor ~~(1)~~, with a converter ~~(5)~~ and a control unit ~~(6)~~ for the converter ~~(5)~~, which is embodied the control unit being operable to execute the method in accordance with ~~one of the claims 1 to 9~~ claim 1.

FOR NATIONAL PHASE SUBMISSION

5

11. (Currently Amended) DA device~~(9)~~ in accordance with Claim 10, ~~characterized by further comprising~~ a sensor~~(8)~~ which determines the orientation and/or the rotary frequency ~~(f)~~ of the energizing field~~(F)~~ feeds it to the control unit ~~(6)~~ as an input variable.